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CASE REPORT

Self-limiting Spontaneous Isolated Celiac Artery Dissection: A Case Report

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Introduction: Isolated dissection of the celiac artery is rare, with less then 100 cases reported to date. Although some patients present with epigastric pain and tenderness, many cases are asymptomatic and found incidentally on CT. The appropriate management of isolated celiac artery dissections is unclear. This report illustrates an observational approach to a symptomatic case of isolated celiac artery dissection.
Report: A 55-year-old Caucassian male presented to the emergency department with epigastric pain. His Initial CT revealed possible celiac artery dissection with associated intramural hematoma. Due to continued pain, a subsequent CTA was ordered. This scan showed progression of the intramural hematoma to near occlusion of the hepatic artery. Despite this, there were no signs of ischemic hepatitis as indicated by normal levels of liver transaminases. There was also no evidence to suggest propagation of the dissection or pseudo-aneurysm formation. We therefore choose a conservative and observational approach to this isolated celiac artery dissection. His dissection was managed with ASA and metoprolol, and he was discharged after 1 week of observation. 3 week follow-up CTA showed spontaneous resolution of the intramural hematoma and improved patency of the hepatic artery. There was no change at 3 months follow-up.
Conclusion: This case highlights that an observational approach to cases of isolated celiac artery dissection may be indicated if there is no evident end organ disease or malperfusion.

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INTRODUCTION

Isolated dissection of the celiac artery is rare. Although some patients present with epigastric pain, many cases are asymptomatic and found incidentally on CT. The appropriate management of isolated celiac artery dissections is unclear. The literature has suggested surgical and/or endovascular therapy for complicated dissections including pseudoaneurysms, end organ malperfusion and ongoing pain. For uncomplicated cases management includes anticoagulants and beta-blockers. We herein report a case of a 55-year-old man presenting to our emergency room with abdominal pain who was later diagnosed with celiac artery dissection.

CASE

A 55-year-old Caucasian male with no significant past medical history presented to the emergency department with epigastric pain. His vital signs were stable and physical examination revealed mild epigastric tenderness on palpation. Because of ongoing pain, a CT scan was ordered and revealed possible celiac artery dissection with associated intramural hematoma of the hepatic artery (Fig 1).

After being admitted to hospital, medical management was initiated with aspirin and beta blocker. A repeat CTA was performed because of ongoing pain. This showed progression of the intramural hepatic artery hematoma. He was placed on a heparin drip but this was discontinued on follow-up CT showing progression of the intramural hematoma to near occlusion of the hepatic artery (Fig 2).

This patient remained in hospital for the next week for observation. There was no change in symptomology or liver function and no indication of disease progression. He was discharged under instruction to continue ASA and metoprolol.

He returned for follow-up CT in 3 weeks time. Interestingly, this scan revealed spontaneous resolution of the intramural hematoma in the hepatic artery and improved patency of the artery (Fig 3). Although he still complained of mild epigastric pain, nausea and early satiety, we were unsure whether this was related to his hepatic artery. Both liver enzyme and function tests were within normal limits.

A 3 month follow up CT scan showed normal celiac and patent hepatic artery (Fig 4). Due to ongoing nausea and early satiety, an upper endoscopy was ordered to rule out a

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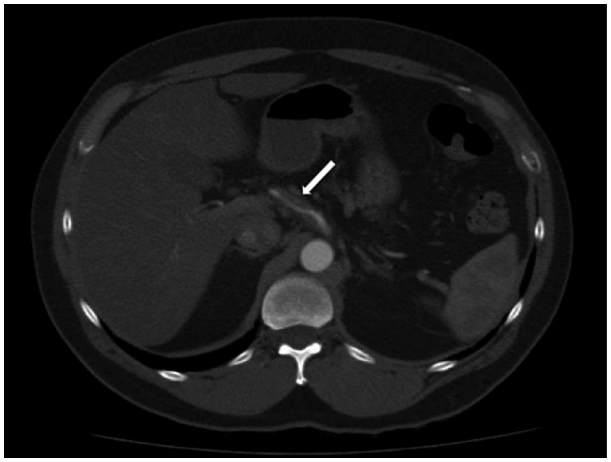

Figure 1. Abdominal CTA taken at admission showing celiac artery dissection with extension of intramural hematoma into the hepatic artery.

gastrointestinal cause. This exam revealed small gastric erosions negative for helicobacter pylori. He was subsequently started on a proton-pump inhibitor and is at present being followed by his family physician.

DISCUSSION

Spontaneous isolated celiac artery dissection is a rare yet serious condition. Visceral dissections presenting in the common hepatic, splenic and superior mesenteric arteries are more common, with celiac presentations accounting for 4% of all cases.[1] Fewer then 100 cases have been reported in the literature to date.[2] The use of modern CTA for the diagnosis of acute abdominal pain has been attributed to the rise in number of reported cases.[3]

The average age of patients presenting with celiac artery dissection is 55, with a significant male predominance (75%).[2] Risk factors for the development of spontaneous celiac artery dissection include hypertension, arteriosclerosis and degradation of the arterial wall, trauma, pregnancy, and arteriopathy.[4] However, in one of the largest case series, 2 of 6 patients suffering from spontaneous celiac artery dissection had no underlying comorbidities.[5] The clinical presentation of celiac artery dissection is varied, with the most common feature being moderate to severe epigastric pain with associated tenderness. Weight loss has also been described in individuals. Jaundice, pancreatitis, intestinal angina and asymptomatic presentations have also been documented. There have been a number of reported sequelae including organ infarct, ischemia, hemorrhage, and vascular complications, although some celiac artery dissections remain uncomplicated.[1]

Treatment of spontaneous celiac artery dissections has not been well studied. For symptomatic presentations, surgical or endovascular intervention has been suggested.[2] Surgical intervention is also attractive for its ability to obtain biopsy ruling out any contributing pathologies, including vasculitis and segmental arterial mediolysis.[6]

Endovascular stenting has been applied to symptomatic splanchnic artery dissections, including celiac and supervisor mesenteric branches.[7] In general, improvement of symptomology has been reported at follow-up. In a recent case series, 3 patients with persistent pain resulting from

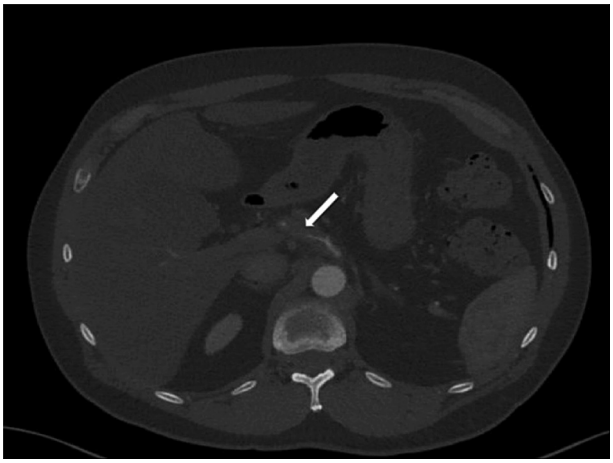

Figure 2. Abdominal CTA showing progression of the intramural hematoma to near occlusion of the hepatic artery.

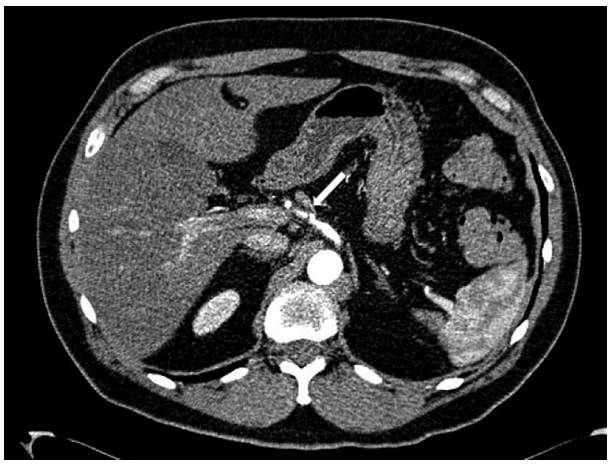

Figure 3. Follow-up CTA showing spontaneous resolution of the celiac artery dissection and patent hepatic artery with receding intramural hematoma.

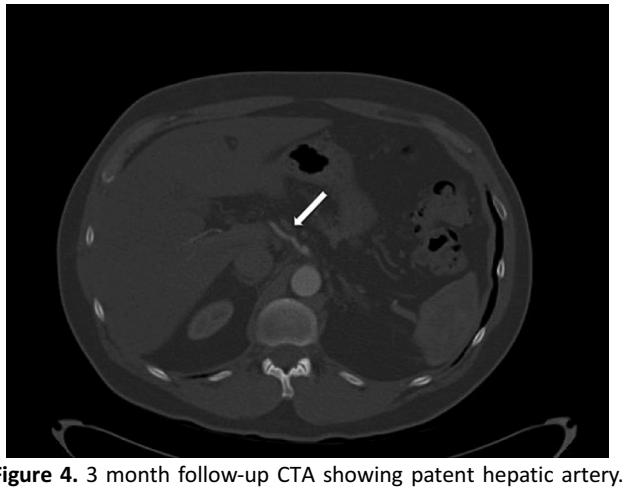

Figure 4. 3 month follow-up CTA showing patent hepatic artery.

their dissection underwent endovascular stenting. 100% of these patients had improved or stabilized pain.[2] Despite these documented cases of successful endovascular intervention for isolated dissections, it was not considered for this patient as the true lumen of the hepatic artery was far to small to allow adequate catheter access and subsequent stent deployment. In addition, there was no evidence of propagation of the dissection, pseudo-aneurysm, or end organ malperfusion.

Successful medical management by means of anticoagulation therapy of isolated celiac artery dissection has been consistently reported in the literature.[3,5,8–10] Continuous heparin administration can later be transitioned to oral warfarin until symptom resolution.[11] It is important to note however, that there is no evidence to support anticoagulation therapy lasting longer then 6 months for dissections of the celiac artery. At this point, surgical options should be considered.[4]

Some authors have reported the use of an antiplatelet regimen during the acute phases of spontaneous celiac artery dissection to protect against thromboembolic events.[8,12,13] To help prevent further advancement of the dissection, strict blood pressure control has been recommended.[3]

Patients should be carefully monitored by CTA to evaluate the status of their dissection and assess for sequelae. For asymptomatic dissections, CTA and physical examination has been suggested at 6 and 12 months, after which annual surveillance should be considered for 5 years. Symptomatic dissections should be reassessed every 6 months until symptom resolution or intervention.[2]

CONCLUSIONS

Isolated celiac artery dissection is a rare condition with poorly understood natural history. While successfully treatment has been documented in the literature, there is lack of consensus among vascular specialists regarding the need for surgical intervention. This case highlights that an observational approach to cases of isolated celiac artery dissection may be indicated if there is no evident end organ disease or malperfusion. Herein, near complete occlusion of the hepatic artery resolved organically. These authors stress the importance of further evaluation concerning the management of celiac artery dissections.

CONFLICT OF INTEREST/FUNDING

None

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